

What is Claimed is:

1        1. A method for a sender to send an encrypted message to an authorized  
2 recipient, the method having steps comprising:

3              creating an encrypted content message that may be decrypted using a  
4 content decryption key that is unknown to the authorized recipient;

5              creating an encrypted authentication message that may be decrypted using a  
6 recipient's key wherein the recipient's key is known to the authorized recipient but  
7 unknown to others except perhaps known to the sender; 112[2]

8              fixing the encrypted authentication message and the encrypted content  
9 message onto a tangible medium and thereafter permitting the authorized recipient  
10 to obtain the tangible medium;

11              if a valid reply has been received, wherein the valid reply is based upon the  
12 decrypted authentication message, then allowing the authorized recipient to obtain  
13 said content decryption key.

1        2. The method of claim 1 wherein the recipient's key is a secret key that  
2 is shared between the sender and the recipient.

1        3. The method of claim 1 wherein the recipient's key is a recipient's  
2 private key that is associated with a recipient's public key.

1        4. The method of claim 1 wherein said step of creating an encrypted  
2 authentication message further comprises a step of sender authentication  
3 encryption such that the authorized recipient may use a sender's key for decryption  
4 of the authentication message thereby authenticating that the sender was the  
5 source of the encrypted authentication message, such that the sender's key is  
6 known to the authorized recipient, and such that the encrypted authentication  
7 message may be decrypted with a decryption step employing said recipient's key  
8 and with another decryption step employing said sender's key.

1           5.     The method of claim 4 wherein the sender's key is a secret key that is  
2 shared between the sender and the authorized recipient but unknown to others.

1           6.     The method of claim 4 wherein the sender's key is a public key that is  
2 associated with a sender's private key.

1           7.     The method of claim 1 wherein said step of creating an encrypted  
2 content message further comprises a step of sender authentication encryption such  
3 that the authorized recipient may use a sender's key for decryption of the encrypted  
4 content message thereby authenticating that the sender was the source of the  
5 encrypted content message, such that the sender's key is known by the authorized  
6 recipient, and such that the encrypted content message may be decrypted by a  
7 decryption method with a step employing the recipient's key and with another step  
8 employing the sender's key.

1           8.     The method of claim 7 wherein the sender's key is a secret key that is  
2 shared between the sender and the authorized recipient but unknown to others.

1           9.     The method of claim 4 wherein the sender's key is a public key that is  
2 associated with a sender's private key.

1           10.    An article of manufacture for sending an encrypted message from a  
2 sender who possesses a content decryption key to a recipient who possesses a  
3 recipient's key, the article, comprising:

4                 a tangible medium;  
5                 an encrypted content message fixed on said tangible medium, wherein said  
6 encrypted content message may be decrypted using the content decryption key;  
7                 an encrypted authentication message fixed on said tangible medium, wherein  
8 said encrypted authentication message may be decrypted using the recipient's key;  
9                 whereby after the article is delivered to the recipient the recipient may use

10       the recipient's key to decrypt said encrypted authentication message into a  
11       decrypted authentication message, the recipient may use the decrypted  
12       authentication message to send a valid reply to the sender confirming that the  
13       recipient received said article and the sender may then allow the recipient to obtain  
14       the content decryption key.

1           11.      The article of claim 10 wherein the recipient's key is a secret key that  
2       is shared between the sender and the recipient.

1           12.      The article of claim 10 wherein the recipient's key is a recipient's  
2       private key that is associated with a recipient's public key.

1           13.      The article of claim 10 wherein said encrypted authentication message  
2       is sender authentication encrypted such that said encrypted authentication message  
3       may be decrypted by a decryption method having a step employing the recipient's  
4       key and having another step employing a sender's key such that the recipient may  
5       use the sender's key to authenticate that the sender was the source of said tangible  
6       medium.

1           14.      The article of claim 13 wherein the sender's key is a secret key that is  
2       shared between the sender and the authorized recipient but unknown to others.

1           15.      The article of claim 13 wherein the sender's key is a public key that is  
2       associated with a sender's private key.

1           16.      The article of claim 10 wherein said encrypted content message is  
2       sender authentication encrypted such that said encrypted content message may be  
3       decrypted by a decryption method having a step employing the recipient's key and  
4       having another step employing a sender's key such that the recipient may use the  
5       sender's key to authenticate that the sender was the source of said tangible  
6       medium.

1           17. The article of claim 16 wherein the sender's key is a secret key that is  
2 shared between the sender and the authorized recipient but unknown to others.

1           18. The article of claim 16 wherein the sender's key is a public key that is  
2 associated with a sender's private key.

1           19. A method for an authorized recipient to receive an encrypted message  
2 from a sender, the method having steps comprising:

3           receiving a tangible medium from the sender wherein the tangible medium  
4 has fixed upon it an encrypted authentication message and an encrypted content  
5 message;

6           using a recipient's key to decrypt the encrypted authentication message into  
7 a decrypted authentication message, wherein the recipient's key is known to the  
8 authorized recipient but unknown to others except perhaps known to the sender;

9           creating a valid reply using the decrypted authentication message;

10          sending the valid reply to the sender;

11          if the recipient has received a content decryption key from the sender, then  
12 using the content decryption key to decrypt the encrypted content message.